DOCUMENT RESUME

ED 460 144 TM 033 618

AUTHOR	O'Neal, Marcia R.; Snyder, Scott W.; Spor, Mary W.
TITLE	Evaluation of Year 2 of the Alabama Reading Initiative.
SPONS AGENCY	Alabama State Commission on Higher Education, Montgomery.
PUB DATE	2001-11-00
NOTE	24p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (30th, Little Rock, AR, November 14-16, 2001). Contains areas of light print that may not reproduce well. Funded by a federal grant under the U.S. Department of Education Dwight D. Eisenhower Professional Development Program (P.L. 103-382).
PUB TYPE	Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Beginning Reading; Educational Research; Elementary Secondary Education; *Inservice Teacher Education; Low Achievement; Program Evaluation; Reading Achievement; Reading Instruction; *Reading Programs; Standardized Tests; State Programs
IDENTIFIERS	*Alabama

ABSTRACT

This report summarizes research supports addressing three areas as targets for educational improvement in Alabama: beginning reading, expansion of reading power, and intensive intervention for those who are reading below grade level. The paper also describes Alabama's statewide initiative to implement best practices in these areas and summarizes the results of the reading improvement imitative for the year academic 1999-2000. The Alabama Reading Initiative (ARI), a collaborative model, was based on an extensive literature review and teacher training in summer institutes to help teachers implement research-based reading instruction. Implementation began at 16 schools named as Literacy Demonstration Sites for the 1998-1999 school year. In the second year of implementation, the year of this study, approximately 27,700 students, 2,354 teachers, 81 principals, 75 reading specialists, 64 higher education partners, and 21 preservice teacher education programs participated. The year-2 evaluation involved internal and external evaluation components that included surveys completed by 1,860 teachers, 77 principals, 74 reading specialists, 44 higher education partners, and 49 higher education faculty members. Overall findings include small but positive improvement on Stanford 9 reading test results for ARI students. Teachers at ARI schools reported increases in the use of research-based strategies and in student reading time, greater confidence and enthusiasm toward instruction, and improved student and teacher attitudes. Schools varied in the improvement noted on the Stanford 9 results, and findings suggested three factors linked to a greater degree of success: (1) the principal as a champion of ARI; (2) a hands-on and helpful reading specialist; and (3) a deeply involved higher education partner. (Contains 18 references.) (SLD)

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Evaluation of Year 2 of the Alabama Reading Initiative

Marcia R. O'Neal, University of Alabama at Birmingham
Scott W. Snyder, University of Alabama at Birmingham
Mary W. Spor, University of Alabama at Huntsville

Paper presented at the annual meeting of the Mid-South Educational Research Association, November 14-16, 2001, Little Rock, Arkansas

TM033618

This evaluation project was funded in part by a federal grant under the Dwight D. Eisenhower Professional Development Program administered by the Alabama Commission on Higher Education.

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INTRODUCTION

According to the report of the National Assessment of Educational Progress - NAEP (Williams, et. al. 1995), 40% of fourth graders, 30% of eighth graders and 25% of twelfth graders were reading below grade level. NAEP results also show that in Alabama 44% of fourth graders and 34% of eighth graders are scoring below the basic level in reading. Scores on the *Stanford Achievement Test 9* given to Alabama public school students in Grades 3 through 12 in April 2000 reveal that 127,626 students (30.39%) scored in the bottom four stanines.

Knowing that reading is fundamental in preparing students for success in school as well as in life, the Alabama State Board of Education in 1996 appointed a group of educators from K-12 and higher education, individuals from business and industry, and representatives from grassroots support groups to study the reading problem. This group known as the Alabama Reading Panel studied the research on reading and identified the following three areas that needed to be targeted to improve reading at the K-12 levels of instruction: beginning reading, expansion of reading power, and intensive intervention for those who are reading below grade level. This article will summarize the research that supports addressing these three areas, describe the statewide initiative to implement best practices in these areas, and summarize results of the initiative for the year 1999-2000.

THE RESEARCH

Beginning Reading

Effective beginning reading instruction is balanced. In other words, it is comprised of explicit and systematic skill instruction in phonemic awareness and phonics in combination with many opportunities for authentic reading and writing. (Adams, 1995; Adams & Bruck, 1995; Boyer, 1996; Clay, 2001; Cooper & Kriger, 2001; Ruddell, 1999). This balanced approach, supported by the research is reflected in more detail by Snow, Burns, & Griffin (1998) who state,

> Adequate initial reading instruction requires a focus on using reading to obtain meaning from print; understanding the sublexical structure of spoken words; exposing the nature of the orthographic system; practice in the specifics of frequent, regular, spelling-sound relationships; and frequent and intensive opportunities to read. (p. 223).

According to Weaver (1994), "studies investigating children's definitions of reading have found, too, that poorer and younger readers tend to conceptualize reading as a matter of decoding and getting words, whereas older and more proficient readers generally conceptualize reading as more a matter of understanding the text" (p. 3). Therefore, the issue of balance between skills-based instruction and authentic reading is important when teaching children how to read.

Expansion of Reading Power

Expansion of reading power results when students learn strategies to help them to better comprehend text that they are reading. According to the *Standards for the English Language Arts* (1996), "In addition to the knowledge of text and text features, students need to learn an array of processes and strategies for comprehending and producing texts" (p. 16). In addition to strategy-based instruction, other factors that help to expand one's reading ability include an increase in the amount of reading, vocabulary development, deep discussion and questioning, and connecting reading and writing

Research shows that the 90th percentile fifth grader reads about 200 times more text per year than the 10th percentile reader (California Department of Education, 1996) and that there is a positive relationship between the amount of voluntary reading and gains on standardized reading achievement tests (Pearson, 1993). In addition, teachers are spending inadequate amounts of time for strategy-based, comprehension instruction and still assigning reading and asking questions that require very short answers (Vacca & Vacca, 2002). Research also indicates that vocabulary development is directly related to how much students read and to direct teaching in meaningful

contexts (Scott and Nagy, 1997; Beck & McKeown, 1991; Stanovich, 1993-94). According to Pearson (1993) "students who interact daily with print, read what others have written, and write to others regularly come to value reading as tools for learning, enjoyment, and personal insight" (p. 509).

Effective Intervention

Effective intervention can occur when students who read below grade level are provided with specialized instruction. Early diagnosis and early intervention is best (Walker, 2000; Cooper & Kriger, 2001). This cannot be accomplished without teachers who know how to become diagnostic teachers and who can accelerate instruction (Walker, 2000). During reading instruction the teacher must determine whether print or meaning or both are interfering with reading and then must make the instructional adjustments that will promote student success, and must evaluate reading growth as a result of that instruction. Walker (2000) points out that the diagnostic teacher is both a teacher and an evaluator. She is aware of changes in reading behavior and the instructional adjustments that produced the change. "She focuses on teaching rather than testing to reveal those instructional adjustments that produce reading change for a particular student" (p. 122). Snow et al.(1998) state, "It is imperative that teachers at all grade levels understand…the role of instruction in optimizing literacy development" (p. 9).

THE ALABAMA READING INITIATIVE

Alabama Reading Initiative – The Plan

In order to make a difference in reading achievement in Alabama, the Alabama Reading panel knew that "the nature and quality of classroom literacy instruction are a pivotal force in preventing reading difficulties in young children" (Snow et al., 1994, p. 223). Since knowledgeable teachers could be a the key to change, it became important to establish guidelines so that a minimum of 85% of teachers and their administrator in each school would receive at a Summer Institute two weeks of intensive training in reading research and its practical application in the three targeted areas of 1) beginning reading for kindergarten and first-grade students, 2)

expansion of reading power for students in Grades 2 through 12, and 3) intervention for struggling readers at all grade levels. The plan, known as the Alabama Reading Initiative (ARI), is a statewide effort to improve reading instruction significantly and for K-12 public school students ultimately to achieve 100% literacy.

The Alabama Reading Initiative Process

The ARI seeks to accomplish its goals through the implementation of research-based reading instruction described above at Literacy Demonstration Sites. These sites were selected by State Department of Education staff members and designees who traveled the state, visiting schools that had applied to participate in the program. All public schools in the state are eligible to become Literacy Demonstration Sites. Selection is based on the candidate school's knowledge of ARI's goals and program content and the school's commitment to professional development in pursuit of 100% literacy. The Summer Institutes are presented regionally by ARI-trained reading professionals using learning modules developed by ARI.

Unique elements of the ARI model include 1) the three targeted areas cited above, 2) the all-inclusive K-12 focus, 3) the requirement that a minimum of 85% of the faculty attend the training, 4) the requirement that the principal participate in the same training as the faculty and lead the faculty during 10 hours of faculty meetings during the Summer Institute, and 5) the formation of partnerships between the schools and professional educators from Alabama's Institutions of Higher Education .

The Alabama Reading Initiative and the Higher Education Partnership

The ARI is a collaborative model in which Higher Education faculty have been partners from the outset. These Higher Education professionals have served on the Alabama Reading Panel, helped to develop instructional modules for the Summer Institutes, trained both the presenters and their trainers for the Summer Institutes, and presented learning modules at the Institutes. They also participated in the Advanced Study Group, which during Year 1 was dedicated to reviewing current research and practice in-depth. An important by-product of the

active involvement of partner Higher Education faculty in ARI is the opportunity for alignment of pre-service reading education with the research-based, professional development provided at the Summer Institutes.

Implementation of the Alabama Reading Initiative

Implementation of ARI first took place at 16 schools named as Literacy Demonstration Sites for the 1998-1999 school year. For the purpose of this study, these sites are grouped as Cohort A. Sixty-five additional schools became Literacy Demonstration Sites for the 1999-2000 school year, grouped as Cohort B.

Grassroots support for the ARI model has attracted substantial private funding for the Summer Institutes as well as for other key elements of the program. During ARI's first year, 1998-1999, no financial resources were available to support involvement of higher education partners; therefore, their participation was entirely on a voluntary basis. During the second year of ARI, 1999-2000, legislative funding was provided for partner Higher Education faculty to visit the 81 Sites on a monthly basis. State funding also was provided for 75 full-time reading specialists (trained through ARI) to serve the 81 Sites. Each reading specialist supported ARI implementation by working on a daily basis at the Literacy Demonstration Site to help struggling readers and to coach faculty relative to implementation of Summer Institute learning.

In its second year of implementation, approximately 27,700 students, 2,354 teachers, 81 principals, 75 reading specialists, 64 higher education partners, and 21 pre-service teacher education programs in Alabama's higher education institutions were directly involved in the ARI. Of the 81 Literacy Demonstration Sites participating in the second year of the ARI (Cohort A and Cohort B together), five were primary schools; 56 were elementary schools; nine were middle schools; four were high schools; three were K-12 schools; three were K-8 schools; and one was a K-7 school. Twenty-four schools were from small school systems (3,900 students or less), and 57 schools were from systems classified by the Alabama State Department of Education as large (more than 3,900 students). School populations ranged from 188 students to 1,153 students.

Socioeconomic status, as measured by the percentage of stud[illegible] receiving free lunch, ranged from 2.56 to 99.10 percent. In 30 of the 81 schools, more tha[illegible]alf of the students received free lunch.

THE EVALUATION PRO[illegible]CT

The ARI evaluation was funded by a federal grant un[illegible] the U.S. Department of Education Dwight D. Eisenhower Professional Development P[illegible]gram (P.L. 103-382) administered by the Alabama Commission on Higher Educati[illegible] The evaluation was further guided by input from an Evaluation Oversight Committee com[illegible]sed of representatives from private industry, Alabama Commission on Higher Education, the Alabama State Department of Education , institutions of higher education, the A+ Foundation, and Literacy Demonstration Sites (central office administrators and building principals).

This evaluation was approached from an internal/external perspective. The external evaluation Project Director from the University of Alabama at Birmingham Center for Educational Accountability, was responsible for data analysis and interpretation to ensure the integrity of the findings. The internal evaluation Project Director from the University of Alabama at Huntsville, and representatives from the ARI staff participated in the design, development, and execution of the evaluation.

Purpose

The evaluation of Year 2 was crafted to examine the Alabama Reading Initiative from two perspectives. In the K-12 Component, ARI is evaluated for the purpose of improving its effectiveness. In the Pre-Service Component, ARI is evaluated for the purpose of determining its impact on pre-service instruction. The Year 1 evaluation was of the first sixteen Literacy Demonstration Sites[1]. During Year 2, 81 schools were involved.

[1] See "Evaluation of the Alabama Reading Initiative 1998-1999," prepared for the Alabama Commission on Higher Education by the Center for Educational Accountability, University of Alabama in Birmingham, Birmingham, AL.

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The K-12 Component

A primary purpose of the Alabama Reading Initiative (ARI) Year 2 evaluation was to gain an understanding of the factors that could be linked to increased student achievement in reading. With this understanding, ARI could adjust its requirements and procedures to reach its goals of 100% literacy and of expanding to all schools in the state. In order to achieve successful statewide expansion, the ARI needed to know which activities, requirements, and/or features are essential and which are optional; which are strong and which are weak; which should be replicated and which should be adjusted.

Evaluation of The K-12 Component was therefore embodied in four vital questions:

(1) To what extent are ARI schools making progress toward 100% literacy?

(2) Which ARI schools are making progress toward 100% literacy and which are not?

(3) What factors are related to school outcomes?

(4) Why are some ARI schools making more progress than others?

The Pre-Service Component

The long-range solution to Alabama's pursuit of 100% literacy lies, at least in part, with teacher preparation programs. Teacher preparedness to instruct all public school students to learn to read, to expand their reading power, and to provide intervention for struggling readers depends in part on the preparation of teachers and administrators in pre-service programs.

Two questions were posed in evaluating the pre-service component:

(1) To what extent are the elements of ARI reflected in pre-service teacher education programs throughout Alabama?

(2) What ARI factors are related to change in pre-service teacher education programs?

Instruments and Data Collection

Both achievement data and survey responses were used for the K-12 component of the evaluation, and survey responses were used for the pre-service component. Achievement data

used in the evaluation were provided by the Alabama State Department of Education and included results from the *Stanford Achievement Test, Ninth Edition* for students in Grades 3-11.

Survey instruments were developed collaboratively by project directors, with feedback from the Oversight Committee. Both rating-type and open-ended items were included in instruments distributed to teachers, principals, reading specialists, higher education partners, and higher education reading faculty. Responses from teachers, principals, reading specialists, and higher education partners comprised survey data for the K-12 component. Responses from higher education partners and higher education reading faculty comprised data for the pre-service component.

Data collection relative to the survey instruments was accomplished through regional meetings with school personnel and through mailings to higher education partners and to deans of schools of education. Returned surveys included representation from all 81 schools for at least one of the surveys. Responses (response rates) included 1,860 teachers (86%), 77 principals (95%), 74 reading specialists (91%), and 44 higher education partners (54%). Surveys also were returned by 49 higher education reading faculty.

Results

Question 1:

To what extent are ARI schools making progress toward 100% literacy?

Answer to Question 1:

ARI schools made more progress toward 100% literacy than did non-ARI schools.

- Improvements in Normal Curve Equivalency[2] (NCE) scores across Reading Comprehension, Reading Vocabulary, and Total Reading between 1998 and 2000 averaged 1.05 for Cohort A ARI schools and .24 for non-ARI schools (all other Alabama public schools). Improvements in NCE scores across all these reading subtests between 1999 and 2000 averaged .28 for

[2] An NCE score is similar to a percentile score in that it can take values between 1 and 99. Unlike percentile scores, NCE scores can be averaged, allowing means to be calculated across schools and across grade levels.

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Cohort B ARI schools and .20 for non-ARI schools. These improvements translated into small but positive differences in effect sizes[3] favoring ARI schools for each reading subtest for Cohort A and B.

NCE Means and Effect Sizes: Cohort A and Non-ARI Schools

	Cohort A Schools				Non-ARI Schools			
Subtest	1998 Mean NCE	2000 Mean NCE	Difference	Effect Size	1998 Mean NCE	2000 Mean NCE	Difference	Effect Size
Total Reading	51.71	52.67	0.96	0.05	49.69	49.87	0.18	0.01
Reading Vocabulary	51.37	53.10	1.73	0.09	49.94	50.48	0.54	0.03
Reading Comprehension	52.02	52.47	0.45	0.02	49.74	49.73	-0.01	-0.00

NCE Means and Effect Sizes: Cohort B and Non-ARI Schools

	Cohort B Schools				Non-ARI Schools			
Subtest	1999 Mean NCE	2000 Mean NCE	Difference	Effect Size	1999 Mean NCE	2000 Mean NCE	Difference	Effect Size
Total Reading	52.70	52.97	0.27	0.01	49.68	49.87	0.19	0.01
Reading Vocabulary	52.68	53.04	0.36	0.02	50.22	50.48	0.26	0.01
Reading Comprehension	52.48	52.68	0.20	0.01	49.59	49.73	0.14	0.01

- As a group, ARI schools decreased the population of "struggling readers" (students scoring in the bottom three stanines on the *Stanford 9* reading subtests) by as much as 10%. Parallel reductions in the percentage of struggling readers in non-ARI schools over the same periods of time were less than half that of the ARI schools:

Decreases in the Population of Struggling Readers

	1998-2000 Decrease		1999-2000 Decrease	
Subtest	Cohort A	Non-ARI	Cohort B	Non-ARI
Total Reading	9.46%	1.81%	7.83%	2.18%
Reading Vocabulary	10.19%	4.68%	6.39%	3.01%
Reading Comprehension	8.45%	(.09%)*	6.56%	1.42%

*Increase

[3] Effect sizes are indices of the practical significance of differences between average scores. They are determined by computing the differences between means for two groups and then dividing the difference by the amount of dispersion in the scores (standard deviation). Effect sizes may be positive or negative.

- ARI schools increased the percentage of "grade-level r rs" (students scoring in the top five stanines) more than non-ARI schools over the san riods of time. ARI Cohort A schools increased at rates that ranged from 2.18% to 4 as compared to rates of .72% to 2.31% for non-ARI schools. The rate of increase for (rt B schools ranged from 1.28% to 1.84% as compared to rates of increase for non-ARI s ls that ranged from .87% to 1.01%.

Increases in the Population of G -level Readers

	1998-2000 Increase		1999-2000 Increase	
Subtest	Cohort A	Non-AR	Cohort B	Non-ARI
Total Reading	2.18	1	1.53	.90
Reading Vocabulary	4.56	2	1.28	1.01
Reading Comprehension	2.66		1.84	.87

Question 2:

Which ARI schools are making progress toward 100% racy and which are not?

Answer to Question 2:

Findings support that the vast majority of ARI schools a making progress toward the goal of 100% literacy. Still, there is considerable variability in ne gains made by ARI schools.

Approximately 70 percent of ARI schools demonstrated small gains (effect sizes greater than 0 and less than .40) on Reading Vocabulary, Reading Comprehension, or Total Reading; and an additional five percent of ARI schools made moderate (effect sizes between .40 and .70) or large gains (effect sizes of greater than .70) on these measures. An example of the trends in performance across schools is seen in Figure 1. This figure graphically displays the range of change in the percentage of "grade-level readers" (i.e., students scoring at or above stanine 5 on the Reading Comprehension subtest) for Cohort A and Cohort B. The figure reveals that while the majority of schools in Cohorts A and B made positive changes, some schools do particularly well and some schools do less well in terms of the indicator. Similar ranges of performance between schools were found for all indicators of literacy.

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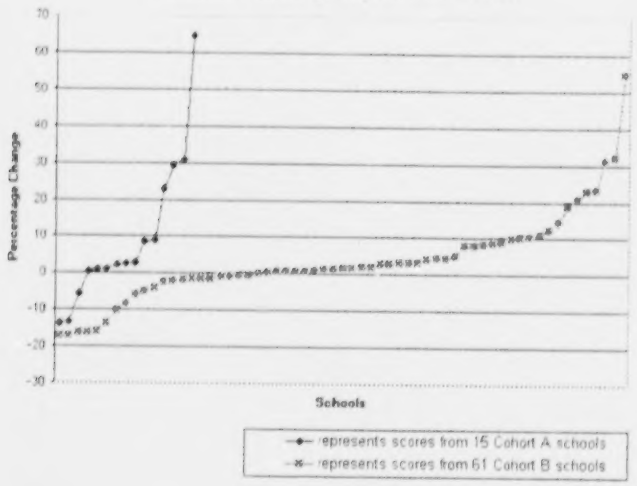
Because of the variability illustrated in Figure 1, it was important to identify factors that might account for differences in the performance of ARI schools. Efforts to identify such factors are summarized later in Questions 3 and 4.

Figure 1. Change in Percentage of Students in Cohort A and Cohort B Schools Scoring at or above Stanine 5 on the *Stanford 9* Reading Comprehension Subtest



Other indicators of positive, yet variable progress among ARI schools include the following:

- *Stanford 9* scores revealed **positive progress toward 100% literacy** on one or more of the reading subtests (effect sizes ranging from .01 to .72) in 13 of the 15 Cohort A schools that have *Stanford 9* scores and 45 of the 61 Cohort B schools.
- **Decreases in the percentage of struggling readers** (.02% to 18%) occurred in 10 of the 15 Cohort A schools and 47 of the 61 Cohort B schools on one or more of the reading subtests.
- **Increases in the percentage of students scoring "on grade level"** (.05% to 28%) occurred in 13 of the 15 Cohort A schools and 51 of the 61 Cohort B schools on one or more of the reading subtests.

- Systematic and substantial **decreases in discipline and special education referrals** were found in the subset of ARI schools (7 in Cohort A and 27 in Cohort B) that reported such data. Discipline referrals in the reporting Cohort A schools decreased by 67%, from 1,795 referrals in 1998 to 596 referrals in 2000. The average decrease in discipline referrals across the 27 reporting Cohort B schools was 23%.
- As a group, the eight reporting Cohort A schools decreased special education referrals by 28% from 1998 to 2000. The 33 reporting Cohort B schools decreased special education referrals by 14% from 1999 to 2000.

To understand why some schools demonstrated marked improvement and others showed losses in achievement, subsets of higher- and lower- performing schools were identified. The method used for identifying higher- and lower- achieving ARI schools included approximately 26 improvement indicators from the *Stanford 9*. Schools included in the final subsets of higher- and lower-performing ARI schools were those that demonstrated substantial consistency across these improvement indicators. Seven Cohort A schools were identified as higher-performing schools and two Cohort A schools were identified as lower-performing. In Cohort B, 14 schools were identified as higher-performing and eight were identified as lower-performing.

Following identification of higher and lower performing schools, *Stanford 9* results for all schools in each group were analyzed. Analyses included the percentage of students scoring in stanines 1 through 3, the percentage of students scoring at or above stanine 5, and NCE means and effect sizes. Results for Total Reading, Reading Vocabulary, and Reading Comprehension are summarized in the tables below.

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Percentage Change: Students Scoring in Stanines 1-3

Subtest	Percentage Change			
	Cohort A High	Cohort A Low	Cohort B High	Cohort B Low
Total Reading	-13.35	20.40	-24.83	29.19
Reading Vocabulary	-7.01	30.39	-24.06	27.90
Reading Comprehension	-12.26	9.43	-20.38	29.90

Percentage Change: Students Scoring at or above Stanine 5

Subtest	Percentage Change			
	Cohort A High	Cohort A Low	Cohort B High	Cohort B Low
Total Reading	2.15	-3.01	11.56	-6.54
Reading Vocabulary	5.46	-9.51	10.85	-5.51
Reading Comprehension	3.29	4.16	10.29	-6.74

Mean NCE Difference Effect Sizes

Subtest	Effect Sizes			
	Cohort A High	Cohort A Low	Cohort B High	Cohort B Low
Total Reading	0.06	-0.02	0.16	-0.16
Reading Vocabulary	0.10	-0.13	0.18	-0.15
Reading Comprehension	0.04	0.04	0.13	-0.15

Clearly, differences exist between higher and lower performing groups. Although Reading Comprehension, Reading Vocabulary, and Total Reading are highlighted here, they were not the only subtests used to identify higher and lower performing schools, as noted earlier. Other subtests included Total Math, Total Language, Science, Social Science, and Total Battery. Whereas higher performing schools performed better than lower performing schools across all three reading subtests, the most obvious difference between higher and lower performing ARI schools was the schools' ability to reduce the percentage of struggling readers in the school. This reflects ARI efforts to improve reading skills among struggling readers (students scoring in stanines 1-3).

Questions 3 and 4:

What factors are related to school outcomes?

Why are some ARI schools making more progress than others?

Answer to Questions 3 and 4: **Several factors discriminated higher- and lower-performing ARI schools. The leadership of the principal and the helpfulness of the reading specialist had the greatest impact on student achievement.**

- The Principal as ARI Champion. Other than the ARI training itself, data point to the principal as having the greatest impact on student achievement. Correlations[4] between principal leadership scores as provided by teachers, higher education partners, and reading specialists and *Stanford 9* effect were .20 or greater between leadership and one or more of the reading scores. In higher-performing ARI schools, the principal supported implementation by facilitating ongoing professional development; providing resources and materials; adjusting schedules in order to enhance reading instruction; supporting and monitoring teacher implementation in the classroom; and encouraging faculty members. In lower- performing schools little or no support was noted.
- The Hands-On, Helpful Reading Specialist. The reading specialist also made a difference. The large majority of teachers in both higher-performing and lower-performing schools considered the role of the reading specialist as important to the successful implementation of ARI. Seventy percent (70%) of the teachers expressed in surveys that the reading specialist was important to serving the needs of students and teachers. However, teacher and principal ratings of the helpfulness of the reading specialist were greater in higher-performing schools than in lower-performing schools. Correlations in excess of .20 were found between teachers' ratings of the helpfulness of the reading specialist and the scores for Reading

[4] Correlations are statistical values that range from –1.0 to 1.0. They relate one score to another score. For example, if scores on principal leadership are positively correlated with scores on the *Stanford 9*, we can conclude that increases in principal leadership are associated with gains on the *Stanford 9*. The higher the correlation is, the greater is the association between leadership and gains.

Comprehension and Reading Total on the *Stanford 9*. Teachers reported that the reading specialist impacted reading skills of struggling readers by working with them directly and by encouraging and assisting teachers. Teachers also commented on the help that reading specialists provided through program oversight, professional development, and materials and resources.

- The Deeply Involved Higher Education Partner. Differences existed in higher- and lower-performing schools in the perceived helpfulness of the higher education partner, particularly as evaluated by the reading specialist. In higher-performing schools, reading specialists report that higher education partners had direct involvement with students, teachers, and reading specialists. They conducted professional development sessions; modeled instruction; arranged for workshops; worked with struggling readers; worked one-on-one with teachers in their classrooms; trained new teachers in the ARI modules; and consulted with the principal. Higher education partners in lower- performing schools were reported to serve more as an emotional support. They listened and encouraged but were less likely to be reported as offering subject matter-related expertise, demonstrations, consultation, and problem-solving.
- Other Implementation Influences. Other factors discriminating higher- and lower-performing schools were teacher reports of the rates at which ARI components were implemented, ongoing professional development hours, increased attention to student reading time, greater attention to reading instructional strategies, more ongoing assessment of student progress, and increased focus on struggling readers.

In addition, teachers responding to survey data reported that ARI had positive impacts on their teaching and student learning. Changes in teaching included use of research-based strategies, increases in time dedicated to student reading, increased confidence and enthusiasm toward reading instruction, increased awareness of struggling readers, and positive school-wide change in the learning environment. Changes reported in student learning included improved reading skill, improved writing abilities, and increased motivation to read.

Questions 5 and 6:

To what extent are the elements of ARI reflected in pre-ser teacher education programs throughout Alabama?

What ARI factors are related to change in pre-service teac education programs?

Answer to Questions 5 and 6:

Findings indicate that changes in course content occurred i e-service teacher education programs throughout Alabama as a result of the ARI. Sur data suggest further that teacher education faculty members perceived the ARI to b t their teaching and their pre-service students.

- All higher education partners and reading faculty who resp d to surveys indicated changes in course content that reflected material contained e ARI teacher training modules and other ARI-published documents.
- All higher education partners and reading faculty who resp d to surveys indicated that current course syllabi incorporated the new reading standar dopted by the Alabama State Board of Education in December 1999. Those standards r ence specifically *Knowledge and Skills Teachers Need to Deliver Effective Reading Inst tion*, a document developed by the ARI and published by the Alabama State Department of ucation in February of 1998.
- A frequently mentioned impact of the ARI on pre-service teac er education programs was the effectiveness of pre-service teaching experiences in Literacy D monstration Sites where students could observe, complete field experiences and internships, and become a part of research-based, effective practice.

Limitations to the Evaluation

The results of the Year Two Evaluation of the Alabama Reading Initiative must be interpreted within the context of several conditions:

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1. Student outcome data came almost exclusively from the *Stanford Achievement Test – Ninth Edition (Stanford 9)*, a norm-referenced measure that forms the accountability system in Alabama. Three items are worth considering when interpreting results:
   - The primary purpose of a norm-referenced instrument is to compare achievement of individuals or groups to that of the norming group. Norm-referenced achievement instruments such as the *Stanford 9* are *not* created as direct measures of the literacy level of the reader.
   - Since the *Stanford 9* is the accountability instrument for Alabama, the evaluation of the ARI is occurring within a competitive environment where all schools in Alabama are expected to perform to a state-established standard on this test. The fact that ARI schools made greater gains than those found in non-ARI schools is noteworthy given the efforts that all Alabama schools are making to improve achievement on the *Stanford 9*.
   - Given the nature of norm-referenced tests, factors such as regression toward the mean and insensitivity to small differences or gains could account for some variability in gains reported for ARI schools.
2. The tests currently used to assess early literacy skills of students in kindergarten through second grade are not designed to assess *ongoing* development of reading ability during the first three years in school. Therefore, the evaluation does not present information concerning the progress of students in Grades K-2, where progress might be expected to occur at a greater rate than in upper grades.
3. All information from survey data was self-reported and was not verified by on-site observations.
4. A specific model was used to identify higher-performing and lower-performing schools. It is likely that other models using different selection criteria would, to some degree, identify different subsets of higher- and lower-performing schools. Therefore, conclusions regarding

differences between higher-performing and lower-performing schools should not be generalized beyond the model used for this evaluation.

Recommendations

Based on the findings of the evaluation as well as the limitations discussed above, the evaluators make the following recommendations to the ARI and subsequent evaluations of the initiative:

1. **Place greater emphasis on the central role of the principal** in facilitating the effective implementation of ARI.
2. **Work to increase the helpfulness of all reading specialists**. Additionally, seek ways of increasing the number of reading specialists, since a prerequisite to "helpfulness" appears to be their availability to work directly with struggling readers and with teachers
3. **Develop strategies to increase the direct involvement of higher education partners** in assisting classroom teachers. Additionally, there is a need for creative incentives that reward service to ARI schools within the traditional higher education faculty evaluation framework of service, scholarship, and teaching.
4. **Explore ways of providing continued professional development, support, and recognition** to schools beyond the first year of implementation.
5. **Increase, to the extent possible, the use of criterion-referenced measures that are designed to document progress of students toward reading at or above grade level.** Implementing fall and spring testing using the individual or group form of the criterion-referenced reading assessment currently administered in kindergarten through Grade 2 and/or linking these measures psychometrically would permit the use of available instruments for this purpose.
6. **Include longitudinal data on "matched" students** across grades within schools in future evaluation efforts.

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7. **Include case studies of the higher-achieving and lower-achieving ARI schools** that include observation data as well as interview data.

8. **Require the collection of other school outcome** measures such as discipline referrals, special education referrals, and library circulation so that such data can be reported by all schools participating in the ARI.

Summary and Discussion

Limitations notwithstanding, overall findings include small but positive differences in *Stanford 9* reading results favoring ARI schools. The decrease in the percentage of struggling readers and the increase in the percentage of grade-level readers also favored ARI schools over non-ARI schools. These results provide evidence of the extent of ARI's success in addressing both the expansion of reading power and effective intervention. However, as noted in the limitations, the assessment of early literacy skills presented problems; therefore, ARI's efforts to address beginning reading could not be documented using student outcomes.

Several other positive results of ARI emerged from both outcome data and the reports and data provided by constituency groups. Additional student assessment findings from the evaluation included concomitant changes in other *Stanford 9* subtests, including Total Math, Total Reading, Science, and Social Science. Furthermore, among those schools reporting such data, systematic and substantial decreases were found in discipline and special education referrals. Teachers reported increased use of research-based strategies, increased student reading time, greater confidence and enthusiasm toward instruction, greater awareness of struggling readers, an improved learning environment, improved student reading and writing skills, and improved student motivation to read. Higher education partners and reading faculty reported changes in course content as well as improved clinical experiences of pre-service teachers.

Despite overall improvements exhibited on the *Stanford 9*, there was considerable variability among ARI schools in the progress they demonstrated. An examination of survey results and their relationship to school outcomes revealed three factors that discriminated between

higher- and lower-performing scho lative to reading achiev ent. These factors included (a) the principal as a champion of ARI the hands-on, helpful r ng specialist; and (c) the deeply involved higher education p: r. Other factors includ he influence of professional development, student reading time. ition to instructional str gies, ongoing assessment, and a focus on struggling readers. Succe reading, which equates success in school and in life, is a result of many factors, some of w may be interdependent With the leadership of the principal, support from the reading cialist and from higher e cation partner, and professional development activities, teachers thr gh research based, effecti practice were able to create an atmosphere for learning that helped readers at all ability levels me better readers. "America will become a nation of readers when erified practices of the b teachers in the best schools can be introduced throughout the country" (Anderson, et. al., 1 5. p. 120).

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